

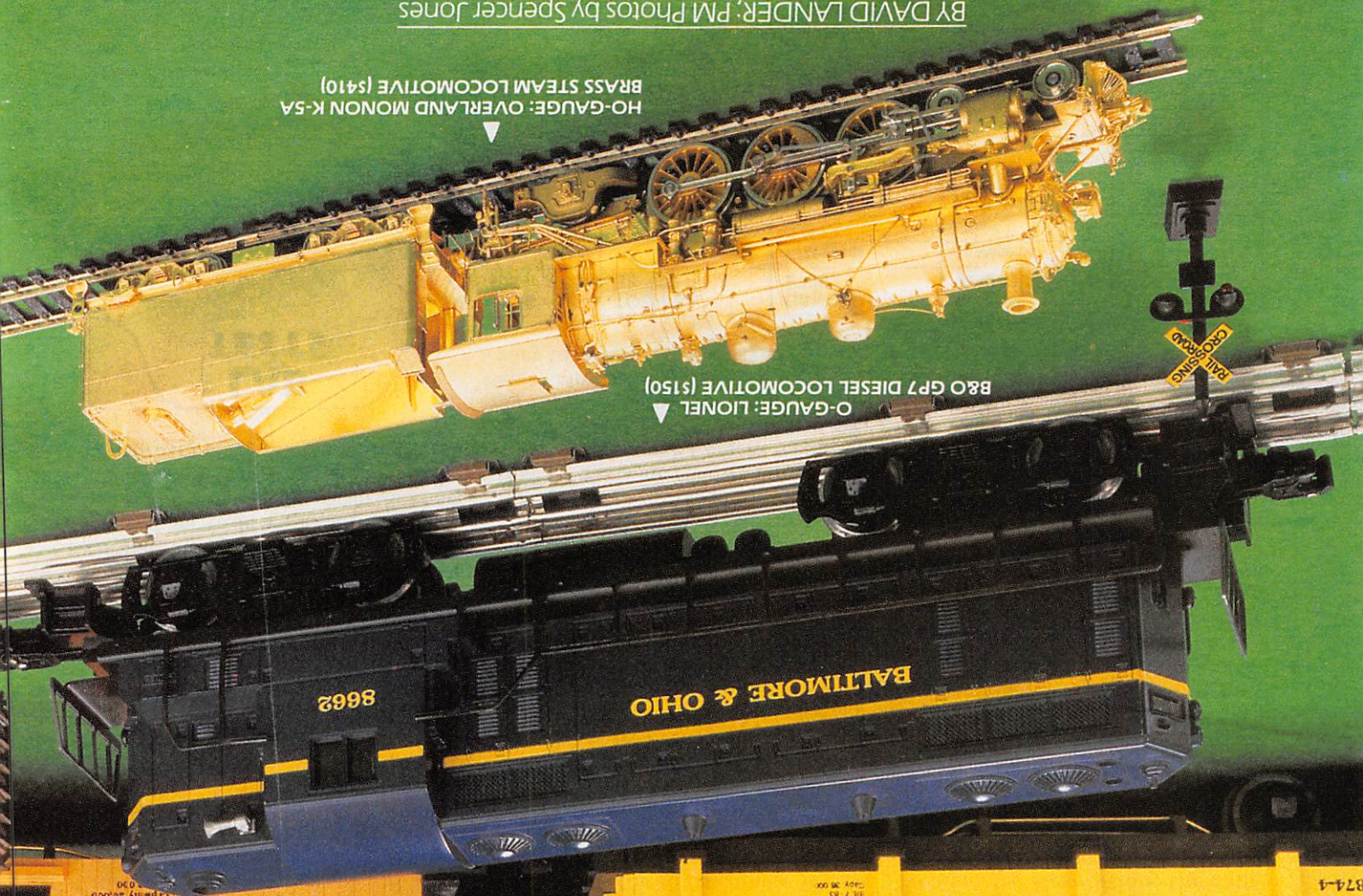
TREASURE TRAINS

I-GAUGE:
KALAMAZOO
GONDOLA
AND
BOXCAR (\$70)



8662

BALTIMORE & OHIO



O-GAUGE: LIONEL
B&O GP7 DIESEL LOCOMOTIVE (\$150)

HO-GAUGE: OVERLAND MONON K-5A
BRASS STEAM LOCOMOTIVE (\$410)

BY DAVID LANDER, PM Photos by Spencer Jones

Children have loved their trains since the first wooden and cardboard models appeared as pull-toys. Engines powered by clockwork motors and live steam followed, and in the late 1800s, the first battery-powered electric trains appeared. Those who bought the earliest electric models hadn't a hint of the addiction they would foster in so many of their children and, in turn, their children's children. To many, old electric trains are prized collector's items now, and countless more who were transported by

founder and motive force, put the passion for toy trains on an express track by making his promises to American boys very clear: "All the excitement, action and high adventure of real railroading," the company's 1941 catalog proclaimed. "The swift speed of the Express as it flashes by! The ponderous, methodical movement of the loaded freighter! Crossing gates being lowered! Warning bells ringing! Signal lights flashing!"

nificant (keep this in mind when reading the charts comparatively). But a difference of 10 dB (seen in some of our samples) is like night and day.

For the noise and resolution tests, APEL provides measurements for *Camera*, *Video Out* and *TV Out*. This describes the three different aspects of camcorder performance.

The *Camera* measurement tells you how good the image is *before* it is recorded on tape. *Video Out* and *TV Out* measure the quality of the tape-recorded image that will be transmitted to your TV screen (via direct-connection to the TV's video input jacks, or an RF connection to the antenna).

Notice that in the *Resolution* tests, the camera measurement is always the highest. This is because current tape-recording systems do not store all the information they are fed. We'll discuss horizontal resolution shortly. Paradoxically, though, video-out and TV-out ratings sometimes equal or exceed those of the camera section in our video-noise measurements. This is because manufacturers, anticipating degradation of the *recorded* signal, often employ internal circuitry to optimize the signal before display.

Seeing red

Internal circuitry also affects four more of our measurements—all taken from the camera section (at 1600 lux) and having to do with color.

You'll find no numbers on the chart for *Color Phase Accuracy* and *Color Saturation*. Instead, these are de-

scribed by words—and graphically via the color charts beside each camcorder at the beginning of this report.

APEL uses a vectorscope to measure how well each camcorder renders the difficult color red. The camcorder is trained on an industry-standard Macbeth color chart. What the camera section sees is represented by a point of light on the vectorscope. Then, for visual purposes, the camcorder's reproduction of the actual chart is fed, directly via the video output, to a Polaroid Freeze-Frame Video Recorder, which takes the snapshots shown here. (For comparison, the actual Macbeth chart is also reproduced here.)

Although the Polaroid instant-film adds its own color bias to the camcorders' color rendition, that the bias is the same for all machines—so the snaps provide a viable indication of the relative color-rendition performance of the camcorders' camera sections. Moreover, the Polaroids accurately visualize what the vectorscope measures.

In *Color Phase Accuracy*, we see whether the camcorder deviates from true red ("in phase")—either to yellow (yielding an orange tint) or to magenta (for a violet tint). *Color Saturation* shows how vividly the camcorder reproduces colors. Under-saturation delivers a pastel appearance. Colors are punchier than in reality when oversaturated. Bear in mind that actual color rendition might be different from our *Camera* measurements when it is recorded on tape, depending on how the signal is processed by internal circuitry. It might vary too when it is displayed on your

TV screen. Color is a subjective matter: You can suit your personal tastes by manipulating the color, tint and other display settings on your TV.

Two performance parameters you cannot influence are *White Balance* and *Color Contamination*. These are inherent to each camcorder.

White balance reveals how well the camcorder corrects itself to render pure whites under different lighting conditions. Color contamination measures the extent to which unwanted speckles of color emerge in a black-and-white image. By the standard Institute of Radio Engineers test, each is measured on a scale of 1 to 100—the lower the reading, the better. All of the camcorders proved excellent.

Keeping resolutions

To measure *Resolution*, the camcorder is focused on a chart that presents varying numbers of parallel, vertical lines arrayed left to right across the chart. The spacing between the lines decreases as their number increases. At the point just before the lines merge into a solid field, or where one can't be discerned from the next, the camcorder has achieved its maximum resolution.

The VHS, VHS-C and 8mm tape recording systems can accommodate 250 lines, at best. The Super formats up the ante to about 400 recordable lines. By way of comparison, the best TV telecast delivers about 330 lines to your TV's antenna.

Inasmuch as camcorders record live images, the more resolution, the better. But live images are usually *moving* images—and the human eye

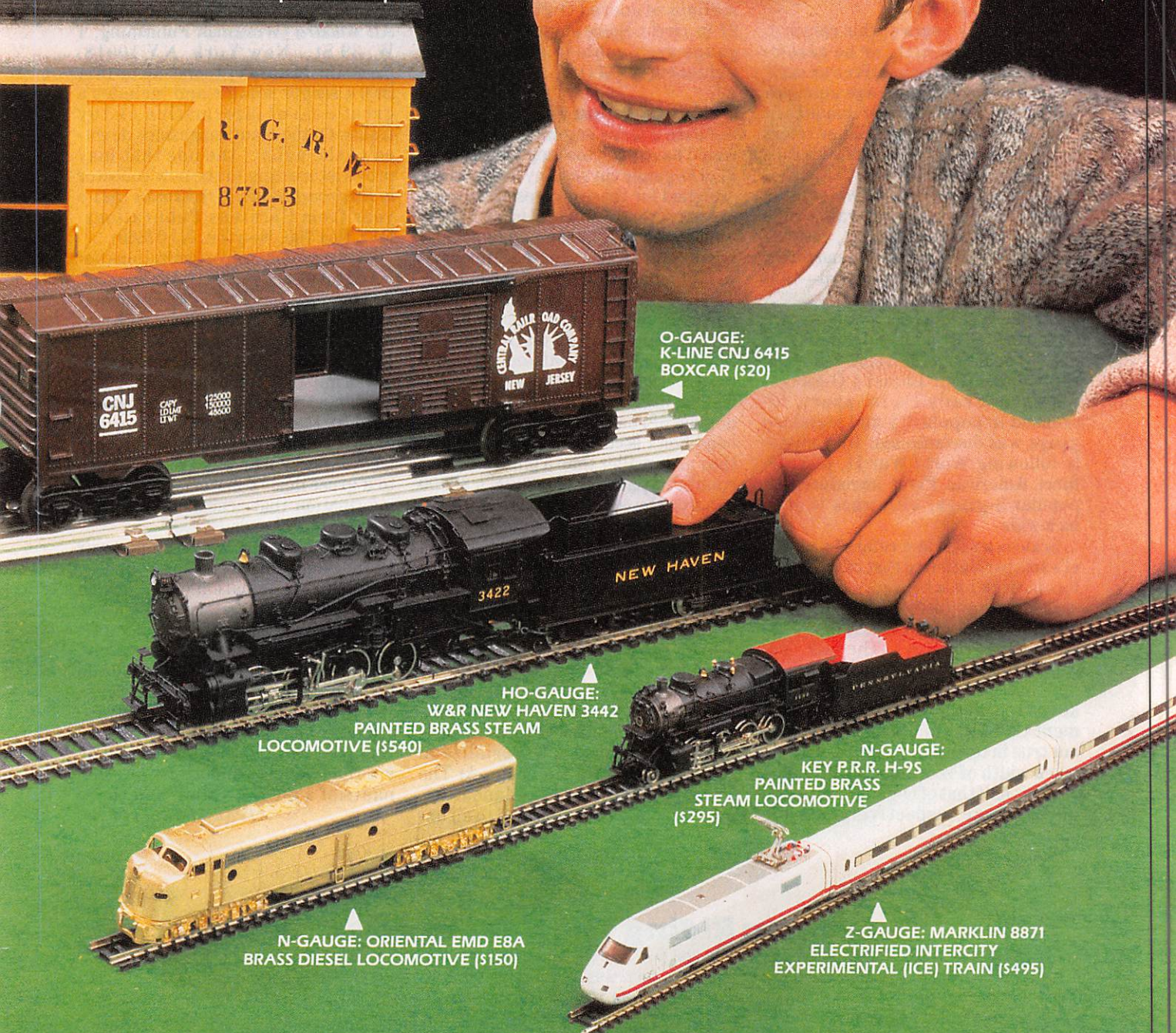
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LAB TESTS

	OLYMPUS VX-S405	TOSHIBA SK-S80	CANON E708	SHARP VL-L80U	MAGNAVOX VR9256AV01
Color Phase Accuracy (Red)	In Phase	In Phase	To Magenta	To Magenta	To Yellow
Color Saturation (Red)	Under	Even	Even	Over	Over
White Balance (I.R.E. ¹)	10	10	9	20	7
Color Contamination (I.R.E. ¹)	4	3	2	5	13
Image Sensor	1/2" CCD	2/3" CCD	1/2" CCD	1/2" CCD	1/2" CCD
Image Streaking/Lag Rejection	Excellent	Excellent	Excellent	Excellent	Excellent
Zoom Lens Focal Range (MM)	8.5-68 (8X)	12-72 (6X)	8.5-68 (8X)	8.5-68 (8X)	9-54 (6X)
Lens, Maximum Aperture	f/1.2	f/1.7	f/1.4	f/1.2	f/1.2
Minimum Focus Distance (Inches)	40	47	46	36	42
Minimum Focus Distance, Macro (Inches)	1/32	1/4	1/32	1/32	1/4
Zoom Speed (Seconds)	8.0	5.0	7.0	5.0 ²	6.0
Fast Shutter Speeds (1/X Seconds)	250/500/1000	1000	500/1000	1000	500/1000
Fast Forward Time (Minutes, AC ³)	6:45	1:50	4:41	9:12	2:06
Fast Rewind Time (Minutes, AC ³)	6:35	1:07	4:20	9:09	2:00
Test Tape (Length In Minutes)	120	20	90	120	20
Power Requirements (AC, Watts)	14.0	11.0	11.5	11.0	10.0
Battery Recording Time (Minutes)	100	60	80	120	60
Weight ⁴ (Pounds)	9	4	4 1/4	7 1/4	4
Size ⁵ , Inches (Height/Width/Length)	9x5x17	7x5x12	8x5x14	9x6x17	6x5x11
Suggested Retail Price	\$2500	\$1996	\$1950	\$1799	\$1499

1. Institute of Radio Engineers, measured at 1600 lux. 2. Speed is a variable from 5 to 20 seconds, wide to tele. 3. With supplied AC adapter. With battery, time is 50 percent longer. 4. Including battery and tape. 5. Rounded up to the nearest inch.

Model trains, those iron hobbyhorses of youth, have grown into cash cows as they evolve from toys to collectibles. Here's how to ride the rails to profit or pleasure.



O-GAUGE:
K-LINE CNJ 6415
BOXCAR (\$20)

HO-GAUGE:
W&R NEW HAVEN 3442
PAINTED BRASS STEAM
LOCOMOTIVE (\$540)

N-GAUGE:
KEY P.R.R. H-9S
PAINTED BRASS
STEAM LOCOMOTIVE
(\$295)

N-GAUGE: ORIENTAL EMD E8A
BRASS DIESEL LOCOMOTIVE (\$150)

Z-GAUGE: MARKLIN 8871
ELECTRIFIED INTERCITY
EXPERIMENTAL (ICE) TRAIN (\$495)

them in their early years have grown up to become model railroaders.

There's a good deal of crossover between contingents of train hobbyists, but a natural division exists between those who collect toys, such as trains made by Lionel and American Flyer (the two most popular among American collectors), and model railroaders. The latter group prefers its trains highly detailed and reproduced to exact scale. While some modelers like to run the trains on elabo-

rate layouts, many collectors treat their scale models as carefully as fine porcelain and refuse to risk compromising their condition by derailment. A leading maker of scale trains with a century of history in the hobby is the German firm, Marklin. A smaller market exists for brass models, which were first produced in the 1950s in Japan and now are made almost exclusively in Korea.

Train buffs often seem to talk in code. Lionel's scale-model Hudson engine, for example, is known as the 700E,

TREASURE TRAINS

its catalog number, or 5344, the number the model actually carries. A locomotive is often referred to as a 0-4-0 or 4-6-6-4. The first number refers to lead trucks, the second, and sometimes a third, to the sets of drive wheels, and the last to trailing trucks. The 700E, with four lead trucks, a single set of six drive wheels, and four trailing trucks is a 4-6-4.

In the early years of this century, toy trains bore little or no resemblance to actual locomotives or cars, and the concept of scale was unimportant. They were, however, made to fit track of a specific gauge. Gauge refers to the distance between a track's rails (in the case of 3-rail track, distance is measured between the two outside rails). The first Lionel trains rode track that spanned $2\frac{3}{4}$ in., but the company soon switched to a narrower gauge—designated standard—that featured rails $2\frac{1}{8}$ in. apart.

Standard gauge trains were expensive, and layouts occupied a great deal of floor space. In the years following the Depression, Lionel's O-gauge, with track rails $1\frac{1}{4}$ in. apart, increased in popularity and standard gauge was discontinued. Immediately following World War II, now-defunct American Flyer introduced its popular S-gauge, with track $\frac{7}{8}$ of an inch wide.

Scale is a ratio and refers to a model's size in relation to that of the car or locomotive on which it is based. O-scale, for example, is 1 to 48 or a $\frac{1}{48}$ of an inch to the foot while S-scale, at 1 to 72, is $\frac{3}{16}$ of an inch to the foot. Because the scale known as HO, which dominates today's model-train market, is 1 to 87, the often-repeated comment that HO stands for half of O is not true in terms of scale. But with its track width of $\frac{5}{8}$ of an inch, the gauge of HO is half that of O-gauge. N-gauge and Z-gauge respectively, used in

scale models, are narrower still.

Suffixes are sometimes added to the letters denoting gauge or scale. Lionel, for example, produced engines for O-27 track as well as O. Clearance between rails is the same in both cases, but a circle of O-gauge track measures $30\frac{3}{4}$ in. in diameter (outer rail to outer rail) while eight sections of curved O-27 track form a 27-in. circle. Some engines built for O-gauge are unable to negotiate the tighter curves of O-27.

Scales of value

Because a large engine built to scale would have been too long to handle O-27 or O-gauge curves, toy locomotives designed for these gauges are always foreshortened in relation to their width and height. In the late '30s, however, Lionel steamed forward with its model 700E Hudson engine. To allow its length to accurately reflect that of its prototype, the model was designed to run on O-72 gauge track, 16 curved sections of which form a circle 72 in. across (measured from center rail to center rail). This degree of realism—including "hex-head bolts accurately shaped though they are smaller than a pinhead"—accounts in part for the 700E's \$2000 value on the collector's market.

If you're a would-be train collector, familiarizing yourself with such designations is only the first step in a long educational process. Novices often start out by purchasing a few randomly selected pieces that appeal to them. More sophisticated buffs work toward a focused collection, unified by manufacturer, by gauge, scale and/or time period. Becoming a sophisticated collector requires research. Visiting hobby shops that specialize in trains is a good way to begin. At The Train Shop in midtown Manhattan, for example, you're exposed to an un-

usually large collection of models, and knowledgeable personnel. Just across the street is The Red Caboose, a source for books on trains.

New Lionel collectors may want to read one or more of the six volumes in Lionel: *A Collectors Guide And History* by Tom McComas and James Tuohy (TM Productions, Box 189, Wilmette, IL 60091). Ron Hollander's *All Aboard* (Workman Publishing, 1 W. 39 St., New York, NY 10018) packs the history of Lionel up to 1981 into a single volume and includes a great deal of information on toy trains. Of the many magazines devoted to the hobby, the one that may prove interesting to the new collector is *Railroad Model Craftsman* (\$21 a year from Carstens Publications, P.O. Box 700, Newton, NJ 07860).

There are several organizations devoted to toy and model trains. For collecting purposes, the most important of these is the Train Collectors Assn. (Box 248, Strasburg, PA 17579). Al Ruocchio, a former president, stresses the importance of membership and attendance at some of the many meets held by its regional divisions and chapters each year. This, the toy-train expert notes, exposes beginners to a great deal of material and to the information that seasoned hobbyists carry in their heads.

Ruocchio, who focuses on pre-war Lionel equipment, notes that key sources of information on the brand are the company's catalogs. While the originals are themselves collector's items, those no longer protected by copyright laws have been reproduced and are available from trade sources.

The most valuable trains are invariably the ones listed there last, Ruocchio points out. Condition and rarity are the two most important determinants of a piece's value, and these

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Brass: Riding The Rails In Class

ONE FACTOR that insures the collectibility of trains modeled in brass is limited availability: All brass pieces are produced in small quantities. Whereas 15 years ago, a typical production run consisted of about 1000 units, 250 is closer to the norm today. A few brass models are produced in editions as small as a handful. These, of course, are the most valuable.

Brass models are done to scale and are highly detailed. The industry started in Japan in the 1950s, and the quality of the earliest imports is not nearly as good as that of today's pieces, which are primarily made by Korean companies. Still, some of the earliest brass models

are collectible simply because of their age.

The fact that brass models of a certain locomotive or car might be reissued at a later date complicates matters for collectors. Improvements in detailing and/or motors often make the newer editions more desirable. Another incentive for collectors to favor the new versions might be factory paint, which adds value.

As for prices, new cars begin around \$60 while highly detailed steam locomotives start at about \$250. An older piece that sold new for \$40 might fetch up to \$500 today while a few limited-edition models now command prices close to \$3000.—D.L.

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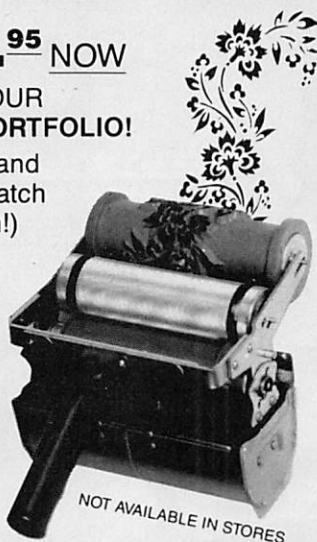
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were the high-end items, the most expensive, and therefore, the ones produced in the smallest quantity. For example, one oddity (now valued at \$600 to \$800) is the Lady Lionel set from the late '50s. With its pink engine, white and gold transformer and cars painted in a rainbow of pastels, the Lady Lionel represented a distinct departure from the main line. Not surprisingly, it derailed.

Items selling for top-dollar must not only be in mint condition but must include their original boxes as well. At the upper end of the Lionel price scale is the standard gauge State set that couples any one of three different engines to four passenger cars emblazoned with the names New York, Illinois, Colorado and California. This combination can fetch \$8000.

The figures associated with Marklin are substantially higher. An extremely rare HO locomotive, made in 1938, sold at auction in 1981 for just under \$40,000. Fewer than a dozen of the model are known to exist.

Always known for its quality and workmanship, Marklin produces trains ranging in size from I-gauge (1 1/8 in. between rails, 1 to 32 in scale) to the tiny Z (1 to 220). With Z-gauge, elaborate layouts can be set up and operated in minimal spaces. One such outfit is available in a briefcase.

Marklin was the first to introduce digital electronics to model railroad-ing. Its digital system lets you operate up to 80 HO trains and 256 switches and/or signals on a single layout, and can be programmed through a personal computer. The company's catalog currently contains several digital engines and, with the simple retrofitting of a chip, others can be converted to digital operation. It's a good bet that these first Digital HO models already are collector's items.

Aside from the astronomically priced rarities, acquiring toy trains is not necessarily a rich man's sport. Many older Lionel cars are available for under \$5, about what they sold for when new. Small 4-6-4 steam engines can be had for about \$100, and some 2-4-2s sell for as low as \$50. Brass scale-models are another story.

If you've got trains in your attic or cellar, and you're curious to learn their value, author Ron Hollander offers free appraisals of toy and model trains by all manufacturers. Send Hollander a stamped, self-addressed envelope and the following information: manufacturer, type of engine or car, numbers and lettering, color and condition. Sharp photos help, but aren't necessary.

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rear. The SE and GSE share a 2.0-liter TBI engine, the others a 1.6-liter TBI. The base car uses a 4-speed, the other's a 5-speed or optional 3-speed automatic.

Subaru introduces the first production electronically controlled, constantly variable transmission ever sold in this country on the Justy. The Justy also has new styling and upgraded suspension to go with the stepless transmission. The familiar Subarus are redesigned—the wagon gets a raised roof—and the veteran Hatchback is in its final season.

A whole new line, called Legacy (Camry and Accord competitors), will originally be sourced from Japan, then from the new Subaru-Isuzu plant in Indiana. Loyale and Legacy, both 1990 cars, get an April intro.

Suzuki adds the Swift GTi, a 1.3-liter dohc 4-cylinder, multipoint fuel-injected 100-hp hatchback, with styling somewhat like the smaller Metro sold by Geo dealers. It should be the quickest small car sold in the U.S. with a 0-60 time of just over 8 seconds. The front-drive subcompact has struts and coil springs front and rear. An automatic transmission is available. The Swift is joined by the Sidekick, a new sport/utility vehicle essentially identical to the Geo Tracker. The 4wd Sidekick will be available in hard and soft-top versions. It has a throttle-body injected 1.6-liter ultralight Four, sohc, 80 hp at 5400 rpm, alloy block, alloy head and hollow crankshaft. Both 5-speed or 3-speed automatic transmissions are available. The Sidekick is larger and wider—a “grown-up” Samurai.

Toyota has a brand-new Cressida, much smoother, rounder and rather blander than the angular car it replaces. Cressida is still front-engined, rear-drive with a 3.0-liter 24-valve dohc inline Six. It has a strut-type front suspension, twin-wishbone rear with coil springs all around, all bearing on a much more rigid unit body. ABS is optional. The new Cressida is longer, lower, wider. The engine management system interrupts power when the automatic transmission shifts to smooth the shift further. A transmission computer provides antisquat and consistent transmission braking.

The Corolla line, new for '88, adds 4wd as an option on the sedan. The rest of the Toyota line is refined but essentially carried over.

Lexus, Toyota's luxury division, will have its offerings ready next September. The 1991 models will be previewed in PM next month.—L.F.



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